AUTHOR INDEX TO VOLUME 134

Aguado, A., see M. Paniagua 134 (1989) 287
Åkesson, E., see M. Kaschke 134 (1989) 85
Aubert-Frécon, M., see B. Bussery 134 (1989) 7

Balint-Kurti, G.G., see S.R. Cohen 134 (1989) 119
Banerjee, A.K., see M. Vala 134 (1989) 149
Beauchamp, J.L., see C.A. Wight 134 (1989) 375
Bergström, H., see M. Kaschke 134 (1989) 85
Bersohn, R., see J. Park 134 (1989) 421
Bougeard, D., Lattice dynamics and intermolecular forces in α-P_4S_3 134 (1989) 317
Boyle, C.M., see S.A.C. Clark 134 (1989) 229
Brion, C.E., see S.A.C. Clark 134 (1989) 229
Bussery, B., M.E. Rosenkrantz, D.D. Konowalow and M. Aubert-Frécon, Semi-empirical determination of the long-range molecular states dissociating to $C(^3P_J)+O(^3P_{J'})$ 134 (1989) 7

Carlile, C.J., S. Clough, A.J. Horsewill and A. Smith, Observation of a dynamic coupling of methyl groups in 4-methylpyridine 134 (1989) 437
Chowdhury, M., see M. Vala 134 (1989) 149
Clark, S.A.C., E. Weigold, C.E. Brion, E.R. Davidson, R.F. Frey, C.M. Boyle, W. von Niessen and J. Schirmer, The valence orbital momentum distributions and binding energy spectra of silane by electron momentum spectroscopy: quantitative comparisons using Hartree–Fock limit and correlated wavefunctions 134 (1989) 229
Clough, S., see C.J. Carlile 134 (1989) 437
Cohen, S.R., R. Naaman and G.G. Balint-Kurti, Investigation of NO scattering from organic monolayers: spin–orbit state and vibrational state population distributions 134 (1989) 119

Daudey, J.P., see A. Ramírez-Solís 134 (1989) 111
Davidson, E.R., see S.A.C. Clark 134 (1989) 229
Decleva, P., G. Fronzoni and A. Lisini, Theoretical study of the correlation effects in the photoelectron spectrum of bis(π-allyl)nickel 134 (1989) 307
Di Marco, P., see W. Stampor 134 (1989) 385
Dufayard, J., see O. Nédélec 134 (1989) 137
Duguay, B., see M.T. Rayez 134 (1989) 55

Fowler, P.W., A.C. Legon, C.A. Rego and P. Tole, Theoretical and experimental evidence for partial ionic character in the trimethylamine–hydrogen chloride dimer 134 (1989) 297
Frey, R.F., see S.A.C. Clark 134 (1989) 229
Fronzoni, G., see P. Decleva 134 (1989) 307
Frood, D.G., see H. Mandal 134 (1989) 441
Fujimura, Y., see Y. Ohtsuki 134 (1989) 103

Gerber, S. and H. Huber, Calculations of ^{14}N nuclear quadrupole coupling constants including electron correlation 134 (1989) 279
Gillbro, T., see M. Kaschke 134 (1989) 85
Gole, J.L., see J.R. Woodward 134 (1989) 395
Grądzki, F., The potential of average force between two ions at infinite dilution in a solvent of polarizable hard spheres 134 (1989) 19
Gruber, J.B., M.E. Hills, R.M. MacFarlane, C.A. Morrison and G.A. Turner, Symmetry, selection rules, and energy levels of $Pr^{3+}:Y_3Al_5O_{12}$ 134 (1989) 241
Günthard, H.H., see T.-K. Ha 134 (1989) 203

Ha, T.-K. and H.H. Günthard, Relaxation of structural parameters and potential coefficients of nonrigid molecules. General symmetry properties and application to ab initio study of 1,2-difluoroethane 134 (1989) 203
Halvick, P., see M.T. Rayez 134 (1989) 55
Hayden, J.S., see J.R. Woodward 134 (1989) 395
Hills, M.E., see J.B. Gruber 134 (1989) 241
Homlid, L., see G. Nyman 134 (1989) 355
Horsewill, A.J., see C.J. Carlile 134 (1989) 437
Huber, H., see S. Gerber 134 (1989) 279
Hush, N.S., see J.R. Reimers 134 (1989) 323

Kalinowski, J., see W. Stampor 134 (1989) 385
Kaschke, M., E. Åkesson, H. Bergström, T. Gillbro and V. Sundström, Picosecond absorption studies of intermolecular electronic energy transfer in micellar systems. II. Polarization-dependent studies of energy migration and energy trapping at low donor excitation densities 134 (1989) 85
Kikuma, J., see H. Umemoto 134 (1989) 193
Kompa, K.L., see P.E. Share 134 (1989) 429
Konowalow, D.D., see B. Bussery 134 (1989) 7
Kurepa, J.M., see M.D. Tasić 134 (1989) 163

Launay, J.M., see B. Lepetit 134 (1989) 93
Lazzeretti, P., Electromagnetic moments and fields induced by nuclear spin, vibrational electric and magnetic field at the nuclei, and nuclear electromagnetic couplings in molecules 134 (1989) 269
Le Dourneuf, M., see B. Lepetit 134 (1989) 93
Legon, A.C., see P.W. Fowler 134 (1989) 297
Lepetit, B., J.M. Launay and M. Le Dourneuf, Hyperspherical study of the reaction $Cs+H_2 \rightarrow CsH+H$ in the rotating linear model 134 (1989) 93
Lin, M.C., see S. Zabarnick 134 (1989) 185
Lisini, A., see P. Decleva 134 (1989) 307
Lüders, K. and K.M. Salikhov, Theoretical treatment of differential recombination probabilities of radical pairs in high magnetic fields 134 (1989) 31
Lushnikov, A.A., Random factors in chemical kinetics 134 (1989) 259

MacFarlane, R.M., see J.B. Gruber 134 (1989) 241
Majournat, B., see O. Nédélec 134 (1989) 137

Mandal, H., D.G. Frood, M.A. Saleh, B.K. Morgan and S. Walker, Dielectric and viscosity studies of the principal relaxation process of liquid 1-alkanols and their solutions 134 (1989) 441
Marković, N. and S. Nordholm, Trajectory study of collision complex formation. Weak to strong coupling transition in atom–diatomic molecule collisions 134 (1989) 69
Masaki, A., see H. Umemoto 134 (1989) 193
Mendaš, I. and P. Milutinović, Trajectory calculations of the capture rate coefficients for the $D_3^{\pm}+C_6F_6$ reactions 134 (1989) 47
Milutinović, P., see I. Mendaš 134 (1989) 47
Morgan, B.K., see H. Mandal 134 (1989) 441
Morrison, C.A., see J.B. Gruber 134 (1989) 241

Naaman, R., see S.R. Cohen 134 (1989) 119
Nédélec, O., B. Majournat and J. Dufayard, Configuration mixings and line intensities in CdH and HgH $A^2\Pi$–$X^2\Sigma^+$ transitions 134 (1989) 137
Nordholm, S., see N. Marković 134 (1989) 69
Nyman, G., K. Rynefors and L. Homlid, Energy distributions from decomposition of a complex $H_2O\rightarrow OH+H$ on a simplified potential energy surface, as a function of total angular momentum: comparison between classical trajectories and an RRKM-type statistical simulation 134 (1989) 355

Ohtsuki, Y. and Y. Fujimura, Effects of bath-induced vibrational transitions on time-resolved resonant light scattering from molecules in condensed phases 134 (1989) 103

Paniagua, M. and A. Aguado, Analysis of the electronic correlation energy in the LiFH PES using density functional methods 134 (1989) 287
Park, J., C.-F. Yu and R. Bersohn, Photodissociation dynamics of the isomers phenyl cyanide and phenyl isocyanide 134 (1989) 421
Petrović, Z.Lj., see M.D. Tasić 134 (1989) 163
Pollak, E., see K. Stefanski 134 (1989) 37
Pshezhetskii, S.Ya., see L.I. Trakhtenberg 134 (1989) 127

Ramírez-Solís, A. and J.P. Daudey, Theoretical study of the spectroscopy of low-lying electronic states of the CuF molecule 134 (1989) 111
Rayez, J.C., see M.T. Rayez 134 (1989) 55
Rayez, M.T., J.C. Rayez, B. Duguay and P. Halvick, Four-atom exoergic indirect reactions $A+BCD\rightarrow AB+CD$. 1D-QCT study of some topological factors influencing the energetic distribution of the products 134 (1989) 55
Rego, C.A., see P.W. Fowler 134 (1989) 297
Reimers, J.R. and N.S. Hush, Electron transfer and energy transfer through bridged systems. I. Formalism 134 (1989) 323
Robinson, G.W., see S.-B. Zhu 134 (1989) 1
Rosenkrantz, M.E., see B. Bussery 134 (1989) 7
Rynefors, K., see G. Nyman 134 (1989) 355

Saleh, M.A., see H. Mandal 134 (1989) 441
Salikhov, K.M., see K. Lüders 134 (1989) 31
Sato, S., see H. Umemoto 134 (1989) 193

Schirmer, J., see S.A.C. Clark 134 (1989) 229
Share, P.E. and K.L. Kompa, An investigation of the excited state dynamics of cyclohexadiene in a supersonic jet 134 (1989) 429
Slavinskaya, N.A., see L.I. Trakhtenberg 134 (1989) 127
Small, G.J., see K. Song 134 (1989) 173
Smith, A., see C.J. Carlile 134 (1989) 437
Song, K. and G.J. Small, Single crystal absorption and fluorescence studies of tetramethyl-1,3-cyclobutanedione 134 (1989) 173
Stampor, W., J. Kalinowski and P. Di Marco, Electroabsorption study of vacuum-deposited films of thionaphthenindole 134 (1989) 385
Stefanski, K. and E. Pollak, Semiclassical theory of hyperspherical vibrational resonances in ABA molecules 134 (1989) 37
Sundström, V., see M. Kaschke 134 (1989) 85
Szczepanski, J., see M. Vala 134 (1989) 149

Takayanagi, T., see H. Umemoto 134 (1989) 193
Tasić, M.D., Z.Lj. Petrović and J.M. Kurepa, The influence of fast excited H fragments on Balmer line emission cross section measurements for H_2 and NH_3 molecules 134 (1989) 163
Tole, P., see P.W. Fowler 134 (1989) 297
Trakhtenberg, L.I., N.A. Slavinskaya and S.Ya. Pshezhetskii, The effect of dynamic properties of the medium on the kinetics of solid-state radical photodissociation processes 134 (1989) 127
Turner, G.A., see J.B. Gruber 134 (1989) 241

Umemoto, H., J. Kikuma, A. Masaki, T. Takayanagi and S. Sato, The intramultiplet mixing of $Zn(4^3P_J)$ by collisions with rare gas atoms 134 (1989) 193

Vala, M., J. Szczepanski, A.K. Banerjee and M. Chowdhury, Polarized absorption spectra of the Nd^{3+} ion in the optically active $Na_3Gd(diglycolate)_3 \cdot 2NaClO_4 \cdot 6H_2O$ single crystal 134 (1989) 149
Von Niessen, W., see S.A.C. Clark 134 (1989) 229

Walker, S., see H. Mandal 134 (1989) 441
Weigold, E., see S.A.C. Clark 134 (1989) 229
Wight, C.A. and J.L. Beauchamp, Multiphoton electron detachment studies of $C_7H_7^-$ using a low-power infrared laser. Competition of radiative and collisional relaxation with vibrational excitation 134 (1989) 375
Woodward, J.R., J.S. Hayden and J.L. Gole, Formation and characterization of a low-lying electronic state of the alkali monoxides LiO...CsO in the red and near infrared 134 (1989) 395

Yu, C.-F., see J. Park 134 (1989) 421

Zabarnick, S. and M.C. Lin, Kinetics of $CN(X^2\Sigma^+)$ radical reactions with HCN, BrCN and CH_3CN 134 (1989) 185
Zhu, S.-B. and G.W. Robinson, Lennard-Jones fluid between adiabatically moved interacting walls 134 (1989) 1

LIST OF SUBJECTS

1 METHODS

1.1 Theoretical

1.1.1 Group theory and algebras *
1.1.2 Classical mechanics *
1.1.3 Quantized field theory
1.1.4 Many body and quasiparticle approaches *
1.1.5 Coupling schemes and perturbative treatments *
1.1.6 Relativistic quantum mechanics
1.1.7 Transport quantum mechanics *
1.1.8 Equilibrium statistical mechanics *
1.1.9 Statistical mechanics of stationary states *
1.1.10 Non-equilibrium thermodynamic and hydrodynamic theories *
1.1.11 Ab initio schemes for stationary properties *
1.1.12 Computational and simulation methods *
1.1.13 Molecular dynamics and scattering theory *

1.2 Experimental

1.2.1 Magnetic resonances *
1.2.2 Cyclotron resonance *
1.2.3 Microwave spectroscopy *
1.2.4 Infrared spectroscopy *
1.2.5 Raman spectroscopy
1.2.6 Visible and UV spectroscopy *
1.2.7 Fluorescence spectroscopy *
1.2.8 Photoelectron and Auger spectroscopy
1.2.9 X-ray spectroscopy
1.2.10 Electron impact spectroscopy *
1.2.11 Laser methods *
1.2.12 Picosecond spectroscopy *
1.2.13 Non-linear optical spectroscopy
1.2.14 Synchrotron spectroscopies
1.2.15 Coherent optical spectroscopy
1.2.16 Optical pumping
1.2.17 Multiple resonance spectroscopy
1.2.18 Optoacoustic spectroscopy
1.2.19 Atomic and molecular beam techniques *
1.2.20 Time-resolved experiments *
1.2.21 Mass spectrometry *
1.2.22 Radiolysis
1.2.23 Mössbauer spectroscopy
1.2.24 X-ray, electron and neutron diffraction
1.2.25 Neutron scattering *
1.2.26 Light scattering
1.2.27 Field emission and field ionization
1.2.28 Measurement of macroscopic variables *

2 OBJECTS

2.1 Bulk systems

2.1.1 Gases *
2.1.2 Supersonic beams *
2.1.3 Liquids neat *
2.1.4 Liquid mixtures and solutions *
2.1.5 Crystals *
2.1.5.1 neat *
2.1.5.2 mixed *
2.1.6 Glasses
2.1.7 Liquid crystals
2.1.8 Polymers
2.1.9 Semiconductors
2.1.10 Metals and alloys
2.1.11 Thin films *
2.1.12 Surfaces *
2.1.13 Low-dimensional materials
2.1.14 Dielectrics *
2.1.15 Plasmas
2.1.16 Biological systems

2.2 Microscopic systems

2.2.1 Atoms *
2.2.2 Molecules (neutral and ionic) *
2.2.2.1 diatomic *
2.2.2.2 small polyatomics *
2.2.2.3 aromatics *
2.2.2.4 other large *
2.2.2.5 polymeric and biological
2.2.3 Molecular aggregates *
2.2.3.1 dimers
2.2.3.2 van der Waals molecules *
2.2.3.3 clusters
2.2.3.4 complexes *
2.2.4 Free radicals (including hydronium and muonium) *
2.2.5 Quasiparticles (including excitons)
2.2.6 Defects and impurities
2.2.7 Ions and charge carriers

* Denotes subjects covered in this volume

3 PHENOMENA

3.1 Molecular structure *
3.2 Vibrations and rotations of molecules *
3.3 Electronic structure and states *
3.4 Electric and magnetic properties *
3.5 Spin splittings
3.6 Optical activity
3.7 Molecular interactions *
3.8 Spectral bandshapes and intensities *
3.9 Coupling of electronic and nuclear motion *
3.10 Energy transfer processes *
3.11 Molecular photophysical processes *
3.12 Intramolecular dynamics *
3.12.1 radiationless transitions
3.12.2 vibrational energy redistribution (including vibrational dissociation)
3.13 Luminescence spectra, yields and lifetimes *
3.14 Coherence loss processes
3.15 Non-linear responses (including optical)
3.16 Multiphoton phenomena *
3.17 Reactions (including dissociation) *
3.17.1 gas phase *
3.17.2 condensed phase *
3.17.3 photochemical *
3.18 Tunnelling *
3.19 Electron transfer *
3.20 Positron annihilation
3.21 Ionization (including Rydberg states) *
3.22 Molecular motion (including diffusive)
3.23 Isotopic effects
3.24 Fluctuations and noise
3.25 Collective motion and excitations
3.26 Surface effects and catalysis *
3.27 Thermodynamic and transport properties
3.28 Structure of solids and liquids
3.29 Critical phenomena
3.30 Phase transitions *

SUBJECT INDEX TO VOLUME 134

METHODS

Theoretical

Group theory and algebras

Relaxation of structural parameters and potential coefficients of nonrigid molecules. General symmetry properties and application to ab initio study of 1,2-difluoroethane, T.-K. Ha and H.H. Günthard 134 (1989) 203

Classical mechanics

Semiclassical theory of hyperspherical vibrational resonances in ABA molecules, K. Stefanski and E. Pollak 134 (1989) 37

Trajectory calculations of the capture rate coefficients for the $D_3^{\pm}+C_6F_6$ reactions, I. Mendaš and P. Milutinović 134 (1989) 47

Many body and quasiparticle approaches

The valence orbital momentum distributions and binding energy spectra of silane by electron momentum spectroscopy: quantitative comparisons using Hartree–Fock limit and correlated wavefunctions, S.A.C. Clark, E. Weigold, C.E. Brion, E.R. Davidson, R.F. Frey, C.M. Boyle, W. von Niessen and J. Schirmer 134 (1989) 229

Coupling schemes and perturbative treatments

Semi-empirical determination of the long-range molecular states dissociating to $C(^3P_J)+O(^3P_{J'})$, B. Bussery, M.E. Rosenkrantz, D.D. Konowalow and M. Aubert-Frécon 134 (1989) 7

Symmetry, selection rules, and energy levels of $Pr^{3+}:Y_3Al_5O_{12}$, J.B. Gruber, M.E. Hills, R.M. MacFarlane, C.A. Morrison and G.A. Turner 134 (1989) 241

Transport quantum mechanics

Theoretical treatment of differential recombination probabilities of radical pairs in high magnetic fields, K. Lüders and K.M. Salikhov 134 (1989) 31

Equilibrium statistical mechanics

The potential of average force between two ions at infinite dilution in a solvent of polarizable hard spheres, F. Grądzki 134 (1989) 19

Statistical mechanics of stationary states

Random factors in chemical kinetics, A.A. Lushnikov 134 (1989) 259

Non-equilibrium thermodynamic and hydrodynamic theories
Lennard-Jones fluid between adiabatically moved interacting walls, S.-B. Zhu and G.W. Robinson 134 (1989) 1

Ab initio schemes for stationary properties
Theoretical study of the spectroscopy of low-lying electronic states of the CuF molecule, A. Ramírez-Solís and J.P. Daudey 134 (1989) 111
Relaxation of structural parameters and potential coefficients of nonrigid molecules. General symmetry properties and application to ab initio study of 1,2-difluoroethane, T.-K. Ha and H.H. Günthard 134 (1989) 203
Random factors in chemical kinetics, A.A. Lushnikov 134 (1989) 259
Electromagnetic moments and fields induced by nuclear spin, vibrational electric and magnetic field at the nuclei, and nuclear electromagnetic couplings in molecules, P. Lazzeretti 134 (1989) 269
Calculations of ^{14}N nuclear quadrupole coupling constants including electron correlation, S. Gerber and H. Huber 134 (1989) 279
Analysis of the electronic correlation energy in the LiFH PES using density functional methods, M. Paniagua and A. Aguado 134 (1989) 287
Theoretical and experimental evidence for partial ionic character in the trimethylamine–hydrogen chloride dimer, P.W. Fowler, A.C. Legon, C.A. Rego and P. Tole 134 (1989) 297
Theoretical study of the correlation effects in the photoelectron spectrum of bis(π-allyl)nickel, P. Decleva, G. Fronzoni and A. Lisini 134 (1989) 307

Computational and simulation methods
Lennard-Jones fluid between adiabatically moved interacting walls, S.-B. Zhu and G.W. Robinson 134 (1989) 1
Trajectory calculations of the capture rate coefficients for the $D_3^{\pm}+C_6F_6$ reactions, I. Mendaš and P. Milutinović 134 (1989) 47
Trajectory study of collision complex formation. Weak to strong coupling transition in atom–diatomic molecule collisions, N. Marković and S. Nordholm 134 (1989) 69
Lattice dynamics and intermolecular forces in α-P_4S_3, D. Bougeard 134 (1989) 317
Energy distributions from decomposition of a complex $H_2O \rightarrow OH+H$ on a simplified potential energy surface, as a function of total angular momentum: comparison between classical trajectories and an RRKM-type statistical simulation, G. Nyman, K. Rynefors and L. Homlid 134 (1989) 355

Molecular dynamics and scattering theory
Semiclassical theory of hyperspherical vibrational resonances in ABA molecules, K. Stefanski and E. Pollak 134 (1989) 37
Four-atom exoergic indirect reactions $A+BCD \rightarrow AB+CD$. 1D-QCT study of some topological factors influencing the energetic distribution of the products, M.T. Rayez, J.C. Rayez, B. Duguay and P. Halvick 134 (1989) 55
Trajectory study of collision complex formation. Weak to strong coupling transition in atom–diatomic molecule collisions, N. Marković and S. Nordholm 134 (1989) 69
Picosecond absorption studies of intermolecular electronic energy transfer in micellar systems. II. Polarization-dependent studies of energy migration and energy trapping at low donor excitation densities, M. Kaschke, E. Åkesson, H. Bergström, T. Gillbro and V. Sundström 134 (1989) 85

Hyperspherical study of the reaction $Cs+H_2 \rightarrow CsH+H$ in the rotating linear model, B. Lepetit, J.M. Launay and M. Le Dourneuf 134 (1989) 93
Effects of bath-induced vibrational transitions on time-resolved resonant light scattering from molecules in condensed phases, Y. Ohtsuki and Y. Fujimura 134 (1989) 103
Investigation of NO scattering from organic monolayers: spin–orbit state and vibrational state population distributions, S.R. Cohen, R. Naaman and G.G. Balint-Kurti 134 (1989) 119
Electron transfer and energy transfer through bridged systems. I. Formalism, J.R. Reimers and N.S. Hush 134 (1989) 323
Energy distributions from decomposition of a complex $H_2O \rightarrow OH+H$ on a simplified potential energy surface, as a function of total angular momentum: comparison between classical trajectories and an RRKM-type statistical simulation, G. Nyman, K. Rynefors and L. Homlid 134 (1989) 355

Experimental

Magnetic resonances

Theoretical treatment of differential recombination probabilities of radical pairs in high magnetic fields, K. Lüders and K.M. Salikhov 134 (1989) 31
Electromagnetic moments and fields induced by nuclear spin, vibrational electric and magnetic field at the nuclei, and nuclear electromagnetic couplings in molecules, P. Lazzeretti 134 (1989) 269

Cyclotron resonance

Multiphoton electron detachment studies of $C_7H_7^-$ using a low-power infrared laser. Competition of radiative and collisional relaxation with vibrational excitation, C.A. Wight and J.L. Beauchamp 134 (1989) 375

Microwave spectroscopy

Electromagnetic moments and fields induced by nuclear spin, vibrational electric and magnetic field at the nuclei, and nuclear electromagnetic couplings in molecules, P. Lazzeretti 134 (1989) 269
Theoretical and experimental evidence for partial ionic character in the trimethylamine–hydrogen chloride dimer, P.W. Fowler, A.C. Legon, C.A. Rego and P. Tole 134 (1989) 297

Infrared spectroscopy

Symmetry, selection rules, and energy levels of $Pr^{3+}:Y_3Al_5O_{12}$, J.B. Gruber, M.E. Hills, R.M. MacFarlane, C.A. Morrison and G.A. Turner 134 (1989) 241
Electromagnetic moments and fields induced by nuclear spin, vibrational electric and magnetic field at the nuclei, and nuclear electromagnetic couplings in molecules, P. Lazzeretti 134 (1989) 269

Visible and UV spectroscopy

Configuration mixings and line intensities in CdH and HgH $A^2\Pi$–$X^2\Sigma^+$ transitions, O. Nédélec, B. Majournat and J. Dufayard 134 (1989) 137
Polarized absorption spectra of the Nd^{3+} ion in the optically active $Na_3Gd(diglycolate)_3 \cdot 2NaClO_4 \cdot 6H_2O$ single crystal, M. Vala, J. Szczepanski, A.K. Banerjee and M. Chowdhury 134 (1989) 149
The influence of fast excited H fragments on Balmer line emission cross section measurements for H_2 and NH_3 molecules, M.D. Tasić, Z.Lj. Petrović and J.M. Kurepa 134 (1989) 163
Single crystal absorption and fluorescence studies of tetramethyl-1,3-cyclobutanedione, K. Song and G.J. Small 134 (1989) 173

Symmetry, selection rules, and energy levels of $Pr^{3+}:Y_3Al_5O_{12}$, J.B. Gruber, M.E. Hills, R.M. MacFarlane, C.A. Morrison and G.A. Turner 134 (1989) 241
Electroabsorption study of vacuum-deposited films of thionaphthenindole, W. Stampor, J. Kalinowski and P. Di Marco 134 (1989) 385
Formation and characterization of a low-lying electronic state of the alkali monoxides LiO...CsO in the red and near infrared, J.R. Woodward, J.S. Hayden and J.L. Gole 134 (1989) 395

Fluorescence spectroscopy
Single crystal absorption and fluorescence studies of tetramethyl-1,3-cyclobutanedione, K. Song and G.J. Small 134 (1989) 173
Kinetics of $CN(X^2\Sigma^+)$ radical reactions with HCN, BrCN and CH_3CN, S. Zabarnick and M.C. Lin 134 (1989) 185
Symmetry, selection rules, and energy levels of $Pr^{3+}:Y_3Al_5O_{12}$, J.B. Gruber, M.E. Hills, R.M. MacFarlane, C.A. Morrison and G.A. Turner 134 (1989) 241
Formation and characterization of a low-lying electronic state of the alkali monoxides LiO...CsO in the red and near infrared, J.R. Woodward, J.S. Hayden and J.L. Gole 134 (1989) 395
Photodissociation dynamics of the isomers phenyl cyanide and phenyl isocyanide, J. Park, C.-F. Yu and R. Bersohn 134 (1989) 421

Electron impact spectroscopy
The valence orbital momentum distributions and binding energy spectra of silane by electron momentum spectroscopy: quantitative comparisons using Hartree–Fock limit and correlated wavefunctions, S.A.C. Clark, E. Weigold, C.E. Brion, E.R. Davidson, R.F. Frey, C.M. Boyle, W. von Niessen and J. Schirmer 134 (1989) 229

Laser methods
The intramultiplet mixing of $Zn(4^3P_J)$ by collisions with rare gas atoms, H. Umemoto, J. Kikuma, A. Masaki, T. Takayanagi and S. Sato 134 (1989) 193
Multiphoton electron detachment studies of $C_7H_7^-$ using a low-power infrared laser. Competition of radiative and collisional relaxation with vibrational excitation, C.A. Wight and J.L. Beauchamp 134 (1989) 375
Photodissociation dynamics of the isomers phenyl cyanide and phenyl isocyanide, J. Park, C.-F. Yu and R. Bersohn 134 (1989) 421

Picosecond spectroscopy
Picosecond absorption studies of intermolecular electronic energy transfer in micellar systems. II. Polarization-dependent studies of energy migration and energy trapping at low donor excitation densities, M. Kaschke, E. Åkesson, H. Bergström, T. Gillbro and V. Sundström 134 (1989) 85

Atomic and molecular beam techniques
Investigation of NO scattering from organic monolayers: spin–orbit state and vibrational state population distributions, S.R. Cohen, R. Naaman and G.G. Balint-Kurti 134 (1989) 119
An investigation of the excited state dynamics of cyclohexadiene in a supersonic jet, P.E. Share and K.L. Kompa 134 (1989) 429

Time-resolved experiments
Theoretical treatment of differential recombination probabilities of radical pairs in high magnetic fields, K. Lüders and K.M. Salikhov 134 (1989) 31
Kinetics of $CN(X^2\Sigma^+)$ radical reactions with HCN, BrCN and CH_3CN, S. Zabarnick and M.C. Lin 134 (1989) 185
The intramultiplet mixing of $Zn(4^3P_J)$ by collisions with rare gas atoms, H. Umemoto, J. Kikuma, A. Masaki, T. Takayanagi and S. Sato 134 (1989) 193
Electron transfer and energy transfer through bridged systems. I. Formalism, J.R. Reimers and N.S. Hush 134 (1989) 323

Mass spectrometry
An investigation of the excited state dynamics of cyclohexadiene in a supersonic jet, P.E. Share and K.L. Kompa 134 (1989) 429

Neutron scattering
Observation of a dynamic coupling of methyl groups in 4-methylpyridine, C.J. Carlile, S. Clough, A.J. Horsewill and A. Smith 134 (1989) 437

Measurement of macroscopic variables
Dielectric and viscosity studies of the principal relaxation process of liquid 1-alkanols and their solutions, H. Mandal, D.G. Frood, M.A. Saleh, B.K. Morgan and S. Walker 134 (1989) 441

OBJECTS

Bulk systems

Gases
Semi-empirical determination of the long-range molecular states dissociating to $C(^3P_J)+O(^3P_{J'})$, B. Bussery, M.E. Rosenkrantz, D.D. Konowalow and M. Aubert-Frécon 134 (1989) 7
Four-atom exoergic indirect reactions A+BCD→AB+CD. 1D-QCT study of some topological factors influencing the energetic distribution of the products, M.T. Rayez, J.C. Rayez, B. Duguay and P. Halvick 134 (1989) 55
Trajectory study of collision complex formation. Weak to strong coupling transition in atom–diatomic molecule collisions, N. Marković and S. Nordholm 134 (1989) 69
Kinetics of $CN(X^2\Sigma^+)$ radical reactions with HCN, BrCN and CH_3CN, S. Zabarnick and M.C. Lin 134 (1989) 185
Multiphoton electron detachment studies of $C_7H_7^-$ using a low-power infrared laser. Competition of radiative and collisional relaxation with vibrational excitation, C.A. Wight and J.L. Beauchamp 134 (1989) 375

Supersonic beams
Hyperspherical study of the reaction $Cs+H_2\rightarrow CsH+H$ in the rotating linear model, B. Lepetit, J.M. Launay and M. Le Dourneuf 134 (1989) 93
An investigation of the excited state dynamics of cyclohexadiene in a supersonic jet, P.E. Share and K.L. Kompa 134 (1989) 429

Liquids neat
Lennard-Jones fluid between adiabatically moved interacting walls, S.-B. Zhu and G.W. Robinson 134 (1989) 1
Dielectric and viscosity studies of the principal relaxation process of liquid 1-alkanols and their solutions, H. Mandal, D.G. Frood, M.A. Saleh, B.K. Morgan and S. Walker 134 (1989) 441

Liquid mixtures and solutions
The potential of average force between two ions at infinite dilution in a solvent of polarizable hard spheres, F. Grądzki 134 (1989) 19
Theoretical treatment of differential recombination probabilities of radical pairs in high magnetic fields, K. Lüders and K.M. Salikhov 134 (1989) 31
Dielectric and viscosity studies of the principal relaxation process of liquid 1-alkanols and their solutions, H. Mandal, D.G. Frood, M.A. Saleh, B.K. Morgan and S. Walker 134 (1989) 441

Crystals
Polarized absorption spectra of the Nd^{3+} ion in the optically active $Na_3Gd(diglycolate)_3 \cdot 2NaClO_4 \cdot 6H_2O$ single crystal, M. Vala, J. Szczepanski, A.K. Banerjee and M. Chowdhury 134 (1989) 149
Lattice dynamics and intermolecular forces in α-P_4S_3, D. Bougeard 134 (1989) 317

–neat
Single crystal absorption and fluorescence studies of tetramethyl-1,3-cyclobutanedione, K. Song and G.J. Small 134 (1989) 173
Observation of a dynamic coupling of methyl groups in 4-methylpyridine, C.J. Carlile, S. Clough, A.J. Horsewill and A. Smith 134 (1989) 437

–mixed
Effects of bath-induced vibrational transitions on time-resolved resonant light scattering from molecules in condensed phases, Y. Ohtsuki and Y. Fujimura 134 (1989) 103
Polarized absorption spectra of the Nd^{3+} ion in the optically active $Na_3Gd(diglycolate)_3 \cdot 2NaClO_4 \cdot 6H_2O$ single crystal, M. Vala, J. Szczepanski, A.K. Banerjee and M. Chowdhury 134 (1989) 149

Thin films
Electroabsorption study of vacuum-deposited films of thionaphthenindole, W. Stampor, J. Kalinowski and P. Di Marco 134 (1989) 385

Surfaces
Lennard-Jones fluid between adiabatically moved interacting walls, S.-B. Zhu and G.W. Robinson 134 (1989) 1
Picosecond absorption studies of intermolecular electronic energy transfer in micellar systems. II. Polarization-dependent studies of energy migration and energy trapping at low donor excitation densities, M. Kaschke, E. Åkesson, H. Bergström, T. Gillbro and V. Sundström 134 (1989) 85
Investigation of NO scattering from organic monolayers: spin–orbit state and vibrational state population distributions, S.R. Cohen, R. Naaman and G.G. Balint-Kurti 134 (1989) 119

Dielectrics
Dielectric and viscosity studies of the principal relaxation process of liquid 1-alkanols and their solutions, H. Mandal, D.G. Frood, M.A. Saleh, B.K. Morgan and S. Walker 134 (1989) 441

Microscopic systems

Atoms
The intramultiplet mixing of $Zn(4^3P_J)$ by collisions with rare gas atoms, H. Umemoto, J. Kikuma, A. Masaki, T. Takayanagi and S. Sato 134 (1989) 193

Molecules (neutral and ionic)
The influence of fast excited H fragments on Balmer line emission cross section measurements for H_2 and NH_3 molecules, M.D. Tasić, Z.Lj. Petrović and J.M. Kurepa 134 (1989) 163
Relaxation of structural parameters and potential coefficients of nonrigid molecules. General symmetry properties and application to ab initio study of 1,2-difluoroethane, T.-K. Ha and H.H. Günthard 134 (1989) 203
Theoretical study of the correlation effects in the photoelectron spectrum of bis(π-allyl)nickel, P. Decleva, G. Fronzoni and A. Lisini 134 (1989) 307

–diatomic
Semi-empirical determination of the long-range molecular states dissociating to $C(^3P_J)+O(^3P_{J'})$, B. Bussery, M.E. Rosenkrantz, D.D. Konowalow and M. Aubert-Frécon 134 (1989) 7
Theoretical study of the spectroscopy of low-lying electronic states of the CuF molecule, A. Ramírez-Solís and J.P. Daudey 134 (1989) 111
Configuration mixings and line intensities in CdH and HgH $A^2\Pi$–$X^2\Sigma^+$ transitions, O. Nédélec, B. Majournat and J. Dufayard 134 (1989) 137
The influence of fast excited H fragments on Balmer line emission cross section measurements for H_2 and NH_3 molecules, M.D. Tasić, Z.Lj. Petrović and J.M. Kurepa 134 (1989) 163
Formation and characterization of a low-lying electronic state of the alkali monoxides LiO...CsO in the red and near infrared, J.R. Woodward, J.S. Hayden and J.L. Gole 134 (1989) 395

–small polyatomics
Semiclassical theory of hyperspherical vibrational resonances in ABA molecules, K. Stefanski and E. Pollak 134 (1989) 37
Four-atom exoergic indirect reactions A+BCD→AB+CD. 1D-QCT study of some topological factors influencing the energetic distribution of the products, M.T. Rayez, J.C. Rayez, B. Duguay and P. Halvick 134 (1989) 55
The influence of fast excited H fragments on Balmer line emission cross section measurements for H_2 and NH_3 molecules, M.D. Tasić, Z.Lj. Petrović and J.M. Kurepa 134 (1989) 163
The valence orbital momentum distributions and binding energy spectra of silane by electron momentum spectroscopy: quantitative comparisons using Hartree–Fock limit and correlated wavefunctions, S.A.C. Clark, E. Weigold, C.E. Brion, E.R. Davidson, R.F. Frey, C.M. Boyle, W. von Niessen and J. Schirmer 134 (1989) 229
Calculations of ^{14}N nuclear quadrupole coupling constants including electron correlation, S. Gerber and H. Huber 134 (1989) 279
Analysis of the electronic correlation energy in the LiFH PES using density functional methods, M. Paniagua and A. Aguado 134 (1989) 287

–aromatics
Effects of bath-induced vibrational transitions on time-resolved resonant light scattering from molecules in condensed phases, Y. Ohtsuki and Y. Fujimura 134 (1989) 103
Photodissociation dynamics of the isomers phenyl cyanide and phenyl isocyanide, J. Park, C.-F. Yu and R. Bersohn 134 (1989) 421
Observation of a dynamic coupling of methyl groups in 4-methylpyridine, C.J. Carlile, S. Clough, A.J. Horsewill and A. Smith 134 (1989) 437

–other large
Theoretical study of the correlation effects in the photoelectron spectrum of bis(π-allyl)nickel, P. Decleva, G. Fronzoni and A. Lisini 134 (1989) 307

Molecular aggregates
Electron transfer and energy transfer through bridged systems. I. Formalism, J.R. Reimers and N.S. Hush 134 (1989) 323

–van der Waals molecules
Theoretical and experimental evidence for partial ionic character in the trimethylamine–hydrogen chloride dimer, P.W. Fowler, A.C. Legon, C.A. Rego and P. Tole 134 (1989) 297

–complexes
Trajectory study of collision complex formation. Weak to strong coupling transition in atom –diatomic molecule collisions, N. Marković and S. Nordholm 134 (1989) 69
Energy distributions from decomposition of a complex $H_2O \rightarrow OH + H$ on a simplified potential energy surface, as a function of total angular momentum: comparison between classical trajectories and an RRKM-type statistical simulation, G. Nyman, K. Rynefors and L. Homlid 134 (1989) 355

Free radicals (including hydronium and muonium)
The effect of dynamic properties of the medium on the kinetics of solid-state radical photodissociation processes, L.I. Trakhtenberg, N.A. Slavinskaya and S.Ya. Pshezhetskii 134 (1989) 127
Kinetics of $CN(X^2\Sigma^+)$ radical reactions with HCN, BrCN and CH_3CN, S. Zabarnick and M.C. Lin 134 (1989) 185

PHENOMENA

Molecular structure
Configuration mixings and line intensities in CdH and HgH $A^2\Pi$–$X^2\Sigma^+$ transitions, O. Nédélec, B. Majournat and J. Dufayard 134 (1989) 137
Relaxation of structural parameters and potential coefficients of nonrigid molecules. General symmetry properties and application to ab initio study of 1,2-difluoroethane, T.-K. Ha and H.H. Günthard 134 (1989) 203
Formation and characterization of a low-lying electronic state of the alkali monoxides LiO...CsO in the red and near infrared, J.R. Woodward, J.S. Hayden and J.L. Gole 134 (1989) 395

Vibrations and rotations of molecules
Semiclassical theory of hyperspherical vibrational resonances in ABA molecules, K. Stefanski and E. Pollak 134 (1989) 37

Relaxation of structural parameters and potential coefficients of nonrigid molecules. General symmetry properties and application to ab initio study of 1,2-difluoroethane, T.-K. Ha and H.H. Günthard 134 (1989) 203
Observation of a dynamic coupling of methyl groups in 4-methylpyridine, C.J. Carlile, S. Clough, A.J. Horsewill and A. Smith 134 (1989) 437

Electronic structure and states
Semi-empirical determination of the long-range molecular states dissociating to $C(^3P_J)+O(^3P_{J'})$, B. Bussery, M.E. Rosenkrantz, D.D. Konowalow and M. Aubert-Frécon 134 (1989) 7
Theoretical study of the spectroscopy of low-lying electronic states of the CuF molecule, A. Ramírez-Solís and J.P. Daudey 134 (1989) 111
Polarized absorption spectra of the Nd^{3+} ion in the optically active $Na_3Gd(diglycolate)_3 \cdot 2NaClO_4 \cdot 6H_2O$ single crystal, M. Vala, J. Szczepanski, A.K. Banerjee and M. Chowdhury 134 (1989) 149
Single crystal absorption and fluorescence studies of tetramethyl-1,3-cyclobutanedione, K. Song and G.J. Small 134 (1989) 173
The valence orbital momentum distributions and binding energy spectra of silane by electron momentum spectroscopy: quantitative comparisons using Hartree–Fock limit and correlated wavefunctions, S.A.C. Clark, E. Weigold, C.E. Brion, E.R. Davidson, R.F. Frey, C.M. Boyle, W. von Niessen and J. Schirmer 134 (1989) 229
Symmetry, selection rules, and energy levels of $Pr^{3+}:Y_3Al_5O_{12}$, J.B. Gruber, M.E. Hills, R.M. MacFarlane, C.A. Morrison and G.A. Turner 134 (1989) 241
Theoretical study of the correlation effects in the photoelectron spectrum of bis(π-allyl)nickel, P. Decleva, G. Fronzoni and A. Lisini 134 (1989) 307
Electroabsorption study of vacuum-deposited films of thionaphthenindole, W. Stampor, J. Kalinowski and P. Di Marco 134 (1989) 385
Formation and characterization of a low-lying electronic state of the alkali monoxides LiO...CsO in the red and near infrared, J.R. Woodward, J.S. Hayden and J.L. Gole 134 (1989) 395
An investigation of the excited state dynamics of cyclohexadiene in a supersonic jet, P.E. Share and K.L. Kompa 134 (1989) 429

Electric and magnetic properties
Calculations of ^{14}N nuclear quadrupole coupling constants including electron correlation, S. Gerber and H. Huber 134 (1989) 279

Molecular interactions
The potential of average force between two ions at infinite dilution in a solvent of polarizable hard spheres, F. Grądzki 134 (1989) 19
Analysis of the electronic correlation energy in the LiFH PES using density functional methods, M. Paniagua and A. Aguado 134 (1989) 287
Theoretical and experimental evidence for partial ionic character in the trimethylamine–hydrogen chloride dimer, P.W. Fowler, A.C. Legon, C.A. Rego and P. Tole 134 (1989) 297
Lattice dynamics and intermolecular forces in α-P_4S_3, D. Bougeard 134 (1989) 317
Dielectric and viscosity studies of the principal relaxation process of liquid 1-alkanols and their solutions, H. Mandal, D.G. Frood, M.A. Saleh, B.K. Morgan and S. Walker 134 (1989) 441

Spectral bandshapes and intensities
The influence of fast excited H fragments on Balmer line emission cross section measurements for H_2 and NH_3 molecules, M.D. Tasić, Z.Lj. Petrović and J.M. Kurepa 134 (1989) 163

Coupling of electronic and nuclear motion
Hyperspherical study of the reaction $Cs+H_2 \rightarrow CsH+H$ in the rotating linear model, B. Lepetit, J.M. Launay and M. Le Dourneuf 134 (1989) 93
Single crystal absorption and fluorescence studies of tetramethyl-1,3-cyclobutanedione, K. Song and G.J. Small 134 (1989) 173

Energy transfer processes
Picosecond absorption studies of intermolecular electronic energy transfer in micellar systems. II. Polarization-dependent studies of energy migration and energy trapping at low donor excitation densities, M. Kaschke, E. Åkesson, H. Bergström, T. Gillbro and V. Sundström 134 (1989) 85
Effects of bath-induced vibrational transitions on time-resolved resonant light scattering from molecules in condensed phases, Y. Ohtsuki and Y. Fujimura 134 (1989) 103
Investigation of NO scattering from organic monolayers: spin–orbit state and vibrational state population distributions, S.R. Cohen, R. Naaman and G.G. Balint-Kurti 134 (1989) 119
The intramultiplet mixing of $Zn(4^3P_J)$ by collisions with rare gas atoms, H. Umemoto, J. Kikuma, A. Masaki, T. Takayanagi and S. Sato 134 (1989) 193
Electron transfer and energy transfer through bridged systems. I. Formalism, J.R. Reimers and N.S. Hush 134 (1989) 323

Molecular photophysical processes
Multiphoton electron detachment studies of $C_7H_7^-$ using a low-power infrared laser. Competition of radiative and collisional relaxation with vibrational excitation, C.A. Wight and J.L. Beauchamp 134 (1989) 375

Intramolecular dynamics
The effect of dynamic properties of the medium on the kinetics of solid-state radical photodissociation processes, L.I. Trakhtenberg, N.A. Slavinskaya and S.Ya. Pshezhetskii 134 (1989) 127

Luminescence spectra, yields and lifetimes
Theoretical treatment of differential recombination probabilities of radical pairs in high magnetic fields, K. Lüders and K.M. Salikhov 134 (1989) 31
Effects of bath-induced vibrational transitions on time-resolved resonant light scattering from molecules in condensed phases, Y. Ohtsuki and Y. Fujimura 134 (1989) 103

Multiphoton phenomena
Multiphoton electron detachment studies of $C_7H_7^-$ using a low-power infrared laser. Competition of radiative and collisional relaxation with vibrational excitation, C.A. Wight and J.L. Beauchamp 134 (1989) 375

Reactions (including dissociation)
Energy distributions from decomposition of a complex $H_2O \rightarrow OH+H$ on a simplified potential energy surface, as a function of total angular momentum: comparison between classical trajectories and an RRKM-type statistical simulation, G. Nyman, K. Rynefors and L. Homlid 134 (1989) 355

–gas phase
Semiclassical theory of hyperspherical vibrational resonances in ABA molecules, K. Stefanski and E. Pollak 134 (1989) 37
Trajectory calculations of the capture rate coefficients for the $D_3^{\pm}+C_6F_6$ reactions, I. Mendaš and P. Milutinović 134 (1989) 47
Four-atom exoergic indirect reactions A+BCD→AB+CD. 1D-QCT study of some topological factors influencing the energetic distribution of the products, M.T. Rayez, J.C. Rayez, B. Duguay and P. Halvick 134 (1989) 55
Trajectory study of collision complex formation. Weak to strong coupling transition in atom–diatomic molecule collisions, N. Marković and S. Nordholm 134 (1989) 69
Hyperspherical study of the reaction $Cs+H_2→CsH+H$ in the rotating linear model, B. Lepetit, J.M. Launay and M. Le Dourneuf 134 (1989) 93
Kinetics of $CN(X^2\Sigma^+)$ radical reactions with HCN, BrCN and CH_3CN, S. Zabarnick and M.C. Lin 134 (1989) 185
Energy distributions from decomposition of a complex $H_2O→OH+H$ on a simplified potential energy surface, as a function of total angular momentum: comparison between classical trajectories and an RRKM-type statistical simulation, G. Nyman, K. Rynefors and L. Homlid 134 (1989) 355
Formation and characterization of a low-lying electronic state of the alkali monoxides LiO...CsO in the red and near infrared, J.R. Woodward, J.S. Hayden and J.L. Gole 134 (1989) 395

–condensed phase
Lennard-Jones fluid between adiabatically moved interacting walls, S.-B. Zhu and G.W. Robinson 134 (1989) 1

–photochemical
The effect of dynamic properties of the medium on the kinetics of solid-state radical photodissociation processes, L.I. Trakhtenberg, N.A. Slavinskaya and S.Ya. Pshezhetskii 134 (1989) 127
Photodissociation dynamics of the isomers phenyl cyanide and phenyl isocyanide, J. Park, C.-F. Yu and R. Bersohn 134 (1989) 421

Tunnelling
Observation of a dynamic coupling of methyl groups in 4-methylpyridine, C.J. Carlile, S. Clough, A.J. Horsewill and A. Smith 134 (1989) 437

Electron transfer
Electron transfer and energy transfer through bridged systems. I. Formalism, J.R. Reimers and N.S. Hush 134 (1989) 323

Ionization (including Rydberg states)
The valence orbital momentum distributions and binding energy spectra of silane by electron momentum spectroscopy: quantitative comparisons using Hartree–Fock limit and correlated wavefunctions, S.A.C. Clark, E. Weigold, C.E. Brion, E.R. Davidson, R.F. Frey, C.M. Boyle, W. von Niessen and J. Schirmer 134 (1989) 229
Theoretical study of the correlation effects in the photoelectron spectrum of bis(π-allyl)nickel, P. Decleva, G. Fronzoni and A. Lisini 134 (1989) 307

Surface effects and catalysis
Investigation of NO scattering from organic monolayers: spin–orbit state and vibrational state population distributions, S.R. Cohen, R. Naaman and G.G. Balint-Kurti 134 (1989) 119

Phase transitions
Lattice dynamics and intermolecular forces in α-P_4S_3, D. Bougeard 134 (1989) 317